IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

KOPPERS INC.,	)	
	)	
Plaintiff,	)	Case No. 09-cv-0459
	)	
v.	)	
	)	
ENERGY RESOURCES GROUP, INC.,	)	
	)	
Defendant.	)	

PLAINTIFF KOPPERS INC.'S RESPONSE TO DEFENDANT ENERGY RESOURCES GROUP, INC.'S CONCISE STATEMENT OF MATERIAL FACTS

Pursuant to Local Civil Rule 56(C)(1), Plaintiff Koppers Inc. ("Koppers"), through its attorneys, files the following Response to the Concise Statement of Material Facts filed by Defendant Energy Resources Group, Inc. ("ERG") in support of ERG's Motion for Summary Judgment.

I. RESPONSE TO ERG'S CONCISE STATEMENT OF FACTS

Allegations concerning Background Facts

1. Admitted.

2. Admitted.

3. Admitted.

4. Admitted.

5. Admitted in part and denied in part. Koppers admits that ERG commenced inspection and repair work on the Turbine/Generator in October, 2008. Koppers further admits that ERG last performed services on the Turbine/Generator on or about December, 24, 2008, but denies that ERG "completed its work" at that time. To the contrary, ERG was never able to

completely repair the Turbine/Generator and did not return the Turbine/Generator to Koppers in operable condition. (Complaint ¶ 18.)

6. Denied as stated. Koppers admits that the Turbine/Generator briefly operated from December 25, 2008, through January 17, 2009, but denies ERG's implication or suggestion that ERG completed its repairs in a workmanlike manner or that ERG returned the Turbine/Generator to Koppers in satisfactory condition. To the contrary, on January 17, 2009, Koppers was forced to take the Turbine/Generator offline because the brass ring gear and steel worm gear assembly failed. (Deposition of Gerald Dietrick ("Dietrick Depo.") at 127:21-129:22.)[1] The January 17, 2009, failure was the fifth time that this gear set failed since ERG began its inspection and repair services on the Turbine/Generator commencing in October, 2008. (Dietrick Depo. at 135:12-13.)

7. Admitted.

8. Admitted in part and denied in part. Koppers admits only that it retained General Electric ("GE") to investigate the cause of the gear failure and to perform repairs of the Turbine/Generator. Koppers further admits that it seeks to hold ERG liable for those portions of GE's services which ERG should have performed as part of the 2008 outage. Koppers denies that GE performed "substantial additional work" or that Koppers seeks to hold ERG liable for services which GE provided but which were not part of ERG's agreed to scope of work for the 2008 outage. To the contrary, Koppers has specifically identified those services performed by GE for which Koppers does not seek to hold ERG liable. *See* Koppers' Supplemental Answer to Interrogatory No. 4 of Defendant's First Set on Interrogatories at 5.[2]

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[1] The relevant portions of the Deposition of Gerald Dietrick are included as Exhibit A to Koppers' Appendix of Exhibits, which Koppers filed concurrent with this Response as required under LCvR 56(C)(3).

[2] A true and correct copy of Koppers' Supplemental Answer to Interrogatory No. 4 of Defendant's First Set on Interrogatories is included in Koppers' Appendix as Exhibit B.

9. Admitted.

10. Admitted.

Allegations regarding Koppers' Expert Report

11. Admitted.

12. Admitted in part and denied in part. Koppers admits only that Dr. Kuhn's report does not opine as to the standard of care applicable to ERG's work. The remaining averments are denied as legal conclusions.

13. Denied. To the contrary, Dr. Kuhn's report opines that spark erosion caused by stray electrical current was the cause of the gear failures, and cites testimony of GE's David Moskowitz that the Turbine/Generator's T3 bearing pedestal was not grounded as a source of the stray current. Report at 9. Moreover, Dr. Kuhn testified that the Agreement required ERG to perform a continuity measurement which would determine whether a ground existed between the shaft and the bearing which would allow spark erosion at the interface between the journal and the shaft. (Kuhn Depo. at 198:20-199:5; 201:18-202:7.)[3] The Agreement required ERG to perform a continuity checkout and resistance to ground testing as part of its contracted-for services. (Ex. G, Specifications at ¶ 15.2.2-.3.) Had ERG performed the continuity measurements correctly (or at all), it should have realized that the bearing was not isolated and that stray current existed in the Turbine/Generator. (Kuhn Depo. at 203:1-5.)

14. Denied. To the contrary, Dr. Kuhn's report opines that spark erosion caused by stray electrical current was the cause of the gear failures, and cites testimony of GE's David Moskowitz that the Turbine/Generator's T3 bearing pedestal was not grounded as a source of the stray current. Report at 9.

[3] The relevant portions of the Deposition of Howard Kuhn are included as Exhibit K to Koppers' Appendix of Exhibits.

Allegations regarding Koppers' allegations that ERG is Responsible for Vibrations and Bearing Damages Due to Misalignment of the Coupling

15. Admitted.

16. Admitted in part and denied in part. Koppers admits only that ERG disclosed to Koppers the fact that the coupling was out of alignment by approximately .018". Koppers denies ERG's implication or suggestion, through its use of the misleading phrase "less than perfect alignment," that the misalignment was a minor issue with the Turbine/Generator. To the contrary, GE specifications require that the run-out be no more than .009". (Deposition of Kevin Kaminski ("Kaminski Depo.") at 42:14-18.)[4] Operating the Turbine/Generator with a shaft run out that is greater than allowed per specifications could cause vibrations that would cause damage to the bearings and damage almost any component in the machine. (Kaminski Depo. at 37:5-22.) It could also cause a crack to develop in the Turbine/Generator shaft. (Deposition of David Moskowitz ("Moskowitz Depo.") at 145:7-21.)[5]

17. Admitted.

18. Admitted in part and denied in part. Koppers admits only that ERG offered to perform additional tests to determine the source of the misalignment. The remaining averments are denied as stated. When ERG informed Koppers that it could not correct the sling check run out, Koppers asked ERG what it recommended Koppers do next, to which ERG responded to reinstall the shaft into the machine and run it. (Dietrick Depo. at 227:21-228:4.) Koppers also denies ERG's characterization of the .018" run out as "less than perfect alignment."

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[4] Kevin Kaminski is a former GE Field Engineer who serviced the Turbine/Generator after the final gear failure. (Kaminski Depo. at 8:23-9:2; 10:8-11-7.) A true and correct copy of the relevant portions of the Kaminski Depo. is included as Exhibit C to Koppers' Appendix.

[5] A true and correct copy of the relevant portions of the Moskowitz Depo. is included as Exhibit D to Koppers' Appendix. Moskowitz (who has been employed at GE for 31 years) is a lead field engineer at GE who serviced the Turbine/Generator after the final gear failure. (Moskowitz Depo. at 7:14-8:3; 21:20-25.)

19. Admitted in part and denied in part. Koppers admits only that running the Turbine/Generator with a misaligned shaft could cause vibrations at the bearings. Koppers denies the implication that vibrations are the only adverse effects of running the Turbine/Generator with an out-of-specification run out at the coupling. To the contrary, such actions could cause damage to the bearings and damage almost any component in the machine (Kaminski Depo. at 37:5-22), or could cause a crack to develop in the Turbine/Generator shaft. (Moskowitz Depo. at 145:7-21.) Koppers also denies ERG's characterization of the .018" run out as "less than perfect alignment."

20. Admitted in part and denied in part. Koppers admits only that the Turbine/Generator has vibration monitors at each of its three bearings that measure vibration levels at those bearings. Koppers denies the implication or suggestion that those monitors were operating properly during the 2008 outage. To the contrary, the vibration monitor on the T-2 bearing was inoperable and both the T2 and T3 probes were loose on the bearing housings during the 2008 outage, making the accuracy of any readings questionable. (Dietrick Depo. at 212:22-213:25.) GE discovered that the bolts that mounted the vibration probe on the T2 bearing were stripped and that the probe was not secured to the top of the bearing. (Deposition of Jerry Horning ("Horning Depo.) at 249:23-250:10.)[6] Koppers also denies ERG's characterization of the .018" run out as "less than perfect alignment."

21. Admitted.

22. Admitted in part and denied in part. Koppers admits only that ERG accurately quotes the allegations of its Complaint. To the extent ERG suggests or implies that the

[6] Jerry Horning is the Co-Gen supervisor at the Susquehanna plant. (*Id.* at 4:24-25.) A true and correct copy of the relevant portions of the Horning Depo. is included as Exhibit E to Koppers' Appendix.

referenced paragraphs are the complete allegations concerning Koppers' claims, the averments are denied.

23. Admitted in part and denied in part. Koppers admits only that ERG accurately quotes the allegations of its Complaint. To the extent ERG suggests or implies that the referenced paragraphs are the complete allegations concerning Koppers' claims, the averments are denied.

24. Admitted in part and denied in part. Koppers admits only that in its discovery responses it identified sever wear to the turbine bearings as a possible factor in causing the unusual vibrations that Koppers experienced in running the Turbine/Generator. To the extent ERG suggests or implies that the referenced response is Koppers' complete proof on the issue, the averments are denied.

25. Admitted.

26. Denied. Koppers denies ERG's characterization that "with few exceptions" the vibration levels recorded at the three bearings during the period from December 25, 2008, through January 17, 2009, were "in the same ranges at the vibration levels taken following the completion of GE's work on or about February 14, 2009." Koppers also denies that the referenced log accurately reflect the actual vibration levels the Turbine/Generator experienced between December 25, 2008, through January 17, 2009. The vibration monitor on the T-2 bearing was inoperable and both the T2 and T3 probes were loose on the bearing housings at the time the referenced readings were recorded, making the accuracy of any readings questionable. (Dietrick Depo. at 212:22-213:25.) GE discovered that the bolts that mounted the vibration probe on the T2 bearing were stripped and that the probe was not secured to the top of the bearing. (Horning Depo. at 249:23-250:10.)

Allegations regarding Koppers' Allegations that ERG is Responsible for Multiple Gear Failures

27. Admitted in part and denied in part. Koppers admits only that ERG accurately quotes the allegations of its Complaint. To the extent ERG suggests or implies that the referenced paragraphs are the complete allegations concerning Koppers' claims, the averments are denied.

28. Admitted.

29. Admitted in part and denied in part. Koppers admits only that Mr. Dietrick testified that the ring gear showed "significant wear" at the beginning of the 2008 outage. Koppers denies the implication or suggestion that ERG is not liable or responsible for the multiple gear failures that resulted after ERG inspected and reassembled the Turbine/Generator. Regarding the condition of the ring gear that was in the Turbine/Generator at the beginning of the 2008 outage, ERG reinstalled that ring gear back into the Turbine/Generator after the first failure and attempted to restart the Turbine/Generator with said ring gear. (Deposition of Scott Gagne ("Gagne Depo.") at 50:4-12; 65:7-67:11.)[7]

30. Admitted.

31. Admitted.

32. Admitted in part and denied in part. Koppers admits only that the gauge read that the oil pressure was less than the pressure as recommended by the manual. Koppers denies that this was "inadequate." To the contrary, the oil pressure leading to the cavity was adequate leading up to the 2008 outage because Koppers did not have any problems with gears failing prior to the 2008 outage. (Dietrick at 111:21-112:3.) All of the Turbine/Generator's systems

[7] Scott Gagne is ERG's manager of field services who ran the 2008 outage for ERG. (Gagne Depo. at 5:20-21; 7:9-12.) A true and correct copy of the relevant portions of the Gagne Depo. is included as Exhibit F to Koppers' Appendix.

were working properly prior to the 2008 outage. (Horning Depo. at 109:14-21.) Moreover, the Turbine/Generator is designed to provide sufficient oil pressure to the front end gear assembly without the need for a bypass line. (Moskowitz Depo. at 110:2-6). The bypass line did not make any difference in how the lubrication system worked, and GE saw no evidence that the original oil line was not providing sufficient lubrication. (Kaminski Depo. at 51:20-52:21; 173:3-6.)

33. Admitted in part and denied in part. Koppers admits only that ERG installed a supplemental oil line to supply additional oil pressure to the cavity containing the worm and ring gears and main oil pump. Koppers denies that the supplemental line was necessary to address an alleged "lack of oil pressure." To the contrary, the Turbine/Generator is designed to provide sufficient oil pressure to the front end gear assembly without the need for a bypass line. (Moskowitz Depo. at 110:2-6). Moreover, all systems of the turbine/generator were operational upon shut down in 2008. (Horning Depo. at 109:14-21.)

34. Admitted.

35. Denied. To the contrary, Dr. Kuhn's report opines that spark erosion caused by stray electrical current was the cause of the gear failures, and cites testimony of GE's David Moskowitz that the Turbine/Generator's T3 bearing pedestal was not grounded as a source of the stray current. Report at 9. Moreover, Dr. Kuhn testified that the Agreement required ERG to perform a continuity measurement which would determine whether a ground existed between the shaft and the bearing which would allow spark erosion at the interface between the journal and the shaft. (Kuhn Depo. at 198:20-199:5; 201:18-202:7.) The Agreement required ERG to perform a continuity checkout and resistance to ground testing as part of its contracted-for services. (Ex. G, Specifications at ¶ 15.2.2-.3.) Had ERG performed the continuity

measurements correctly (or at all), it should have realized that the bearing was not isolated and that stray current existed in the Turbine/Generator. (*Id.* at 203:1-5.)

II. ADDITIONAL MATERIAL FACTS AT ISSUE (PURSUANT TO LCvR 56 C(1)(c)

A. The Contract

36. On or about October 7, 2008, Koppers awarded ERG the contract to perform the 2008 inspection and repair services for the Turbine/Generator (the "Agreement"). (Compl. ¶ 13; Answer ¶ 13.)

37. The written terms and conditions of the Agreement consisted of:

a. Purchase Order 890-8-12017, which was later amended in part through a second Purchase Order dated October 20, 2008 (Purchase Order 890-8-12017 sheet 2) (collectively, the "Purchase Orders"), both of which ERG signed on October 20, 2008;

b. "Construction Specification for 2008 Inspection and Repair, Cogeneration Turbine/Generator Set Susquehanna Plant," as revised on 5/28/08 (the "Specifications");

c. "Form M - Koppers, Inc. Supplemental Terms and Conditions Applicable to Contractors" ("Form M");

d. "Koppers, Inc. Contractor, Trucker and Visitor Safety Requirements" (the "Safety Requirements"); and

e. Koppers, Inc.'s OSHA Compliance form.

(Compl. ¶ 13; Answer ¶ 13.) (A true and correct copy of the Agreement is included in Koppers' Appendix as Exhibit G.)

38. The Agreement provides that the Specifications "define finished work, tested and ready for operation." (Ex. G, Specifications at 6.)

39. The Agreement further defines "Substantial Completion" as "the stage in the progress of the Work when the Work or a designated portion thereof is sufficiently complete in accordance with the terms and conditions of the Order and these Supplemental Conditions so that

Koppers can occupy or utilize the same for its intended use." (Ex. G, Supplemental Terms and Conditions at ¶ 20.)

40. The Agreement provides that ERG must achieve Substantial Completion in the time specified in the Order, and that ERG must correct all Work failing to conform to the Agreement whether discovered before or after Substantial Completion. (Ex. G, Supplemental Terms and Conditions at ¶¶ 3; 23.)

41. The 2008 outage was expected to last for twenty-one days. (Compl. ¶ 10; Answer ¶ 10.)

42. Under the Agreement, ERG expressly warranted that all "Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Order, including, if applicable, the approved Construction Plans." (Ex. G, Supplemental Terms and Conditions at ¶ 10.)

43. The contract price of the Agreement was comprised of two parts: (a) lump sum charges for ERG to "open and close" the turbine generator set (for the agreed-to price of $148,300.00) and for ERG to replace the generator's packing with sensitized packing (for the agreed-to price of $95,000.00), and; (b) additional inspections and repairs as identified by ERG which, if agreed to by Koppers, Koppers agreed to pay ERG for on a time and materials basis. (Compl. ¶ 14; Answer ¶ 14.)

44. On or about October 28, 2008, Koppers and ERG agreed to a list of repairs, and the cost for said repairs, which ERG would perform on the Turbine/Generator. The total agreed-to cost of the time and materials portion of the Agreement was $215,000.00. (Compl. ¶ 16; Answer ¶ 16.) (A true and correct copy of the agreed-to list of repairs is included in Koppers' Appendix as Exhibit H.)

B. Multiple Gear Failures

45. As part of the 2008 outage, ERG removed and replaced the brass ring gear portion of the assembly that drives the main oil pump. (Gagne Depo. at 47:21-48:3.)

46. Between the time the 2008 outage commenced on October 20, 2008, through January 17, 2009, the ring gear that is part of the drive assembly for the main oil pump to the Turbine/Generator failed five separate times. (Dietrick Depo. at 127:21-129:22.)

47. The first gear failure occurred on November 21, 2008. The second gear failure occurred on November 22, 2008. The third gear failure occurred on November 26, 2008. The fourth gear failure occurred on December 19, 2008. The fifth and final gear failure occurred on January 17, 2009. (Dietrick Depo. at 135:4-13.)

48. Prior to the 2008 outage at Koppers, ERG's Scott Gagne had never seen a situation where the ring gear failed on multiple occasions upon start up of the Turbine/Generator. (Gagne Depo. at 89:1-5.)

49. ERG's Keith Frisbee could not recall a situation in his years of experience where a brass and worm gear ran to failure. (Deposition of Keith Frisbee ("Frisbee Depo.") at 115:6-7.)[8] Frisbee testified that a brass gear should last for twenty years when experiencing normal wear and tear. (Frisbee Depo. at 112:1-7.)

50. The ring gear that ERG removed from the Turbine/Generator at the beginning of the 2008 outage had been in the unit since at least 1998. (Frisbee Depo. at 110:12-20.)

51. After the fifth gear failure, Koppers retained GE to inspect the Turbine/Generator to determine the cause of the failure. GE determined that the gear failure was caused by electrical discharge. (Dietrick Depo. at 165:17-166:14.)

[8] Keith Frisbee founded ERG in 1984. (Frisbee Depo. at 9:16.) The relevant portions of the Deposition of Keith Frisbee are included as Exhibit I to Koppers' Appendix of Exhibits.

52. Mr. Moskowitz's close visual examination of oil pump drive gears and worm bearings showed frosting and pitting that is characteristic of shaft voltage damage. (Moskowitz Depo. at 30:25-32:6:.) Moskowitz also saw pitting on a gear set that was previously removed before his arrival (Moskowitz Depo. at 33:2-5.)

53. GE's Kevin Kaminski also observed frosting and pitting present on the gears and the worm bearing that was consistent with circulating current damage, supporting the conclusion that gear failure was caused by shaft current. (Kaminski Depo. at 14:12-16:8.)

54. Kaminski also saw frosting and pitting on gear sets other than the failed set that prompted Koppers to retain GE. (Kaminski Depo. at 18:13-18.)

55. The shaft voltage was caused by a grounded outboard generator bearing (the T3 bearing) and because there were no means to ground the shaft. (Moskowitz Depo. at 67:15-23; Dietrick Depo. at 171:9-20.)

56. ERG was responsible for adjusting the bolts that attached the oil supply and return pipe to the bearing pedestal which served as the source ground which caused the stray electrical current. (Dietrick Depo. at 172:16-173:21.)

57. The Agreement required ERG to perform a continuity checkout and resistance to ground testing as part of its contracted-for services. (Ex. G, Specifications at ¶ 15.2.2-.3.

58. Mr. Kaminski prepared a report detailing the condition in which GE found the Turbine/Generator in January, 2009 (Kaminski Depo. at 20:18-20), including GE's observation that final gear failure was caused by damage from electrical discharge due to shaft voltage. (GE Report at 74.)[9]

59. ERG admits that the multiple gear failures prolonged the 2008 outage. (Frisbee Depo. at 141:19-23.)

[9] A true and correct copy of the GE report is attached as Exhibit J to Koppers' Appendix of documents.

C. ERG fails to correct the out-of-specification sling check run out

60. As part of the time and materials portion of the Agreement, ERG agreed to correct the alignment of the shafts that connects the turbine to the generator. (Frisbee Depo. at 152:3-14.) ERG was supposed to align the coupling and align the shaft to make it within operating tolerances. (Dietrick Depo. at 230:23-231-2.)

61. ERG charged Koppers $20,000 to correct the alignment of the shaft. (Gagne Depo. at 174:13-16.)

62. The alignment of the shaft is measured by a sling check run out. To perform a sling check run out, a beam crane is installed over the turbine and set a hook on the shaft of the T3 bearing. Supporting the shaft in a sling, you remove the bearing and put a dial indicator gauge on the shaft, then turn the shaft and measure how much run out there is in the shaft. Run out is the amount of movement (laterally or radially) that the shaft exhibits when turned. (Dietrick Depo. at 222:19-223:18.)

63. At the beginning of the 2008 outage, the run out of the Turbine/Generator shaft was eighteen thousandths of an inch (.018"). (Gagne Depo. at 174:17-22; Frisbee Depo. at 154:14-21.)

64. The maximum allowable run out per specification is .009". (Kaminski Depo. at 42:14-18.) ERG's Scott Gagne admitted that the recommended run out for a shaft the length of the shaft in the Turbine/Generator is .006-.008". (Gagne Depo. at 177:5-8.)

65. Operating the Turbine/Generator with a shaft run out that is greater than allowed per specifications could cause vibrations that would cause damage to the bearings and damage almost any component in the machine. (Kaminski Depo. at 37:5-22.) It could also cause a crack to develop in the Turbine/Generator shaft. (Moskowitz Depo. at 145:7-21.)

66. When ERG returned the shaft to Koppers, ERG measured the sling check run out to be .015", which "hadn't improved much from the initial recommendation." (Gagne at 181:10-13.)

67. Upon arriving on site in January, 2009, GE measured the sling check run out of the shaft to be .020". (Kaminski Depo. at 38:19-22.)

68. To correct the sling check run out, GE removed both the turbine end shaft and generator end shaft and tested the run out of the coupling faces of the shafts. GE found there was a run-out on the coupling face. To correct this problem, GE machined the coupling face so the coupling surfaces which connect the shafts to one another were flat. (Kaminski Depo. at 40:18-43:5.)

69. When GE reassembled the shaft in the Turbine/Generator, the sling check run out was .004". (Kaminski Depo. at 42:9-13.)

Date: October 4, 2010

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on October 4, 2010, a copy of the foregoing Response to the Concise Statement of Material Facts filed by Defendant Energy Resources Group, Inc. was filed electronically. Notice of this filing will be sent by operation of the Court's electronic filing system to all parties indicated on the electronic filing receipt. All other parties will be served by regular U.S. mail. Parties may access this filing through the Court's system. The following parties of record will be noticed via the Court's electronic filing system:

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